Chapter 61

Low adherence to the use of ferrous sulfate in pregnancy associanted with ferroprivate anemia

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ABSTRACT
To evaluate available evidence in the literature of iron deficiency anemia in pregnant women with low adherence to ferrous sulfate. This is an integrative literature review, being consulted in the following databases: LILACS, PUBMED, SCIELO, BVS, MEDLINE. During the period from September to October 2021. Through the descriptors: "Pregnancy AND iron deficiency anemia", "ferrous sulfate AND iron deficiency anemia", "pregnancy AND iron deficiency anemia". A total of 5,892 articles were obtained, after reading the title, abstract and full text of the articles, a total of 10 articles remained at the end. Among the factors responsible for the low adherence to ferrous sulfate by pregnant women, side effects, age, race, low education, multiparity, number of consultations, family income and inadequate prenatal care stand out. In this way, it was observed how important is the qualified assistance of the health professional in the prenatal consultation and the use of strategies for better adherence to the supplement.

Keywords: Gestational period, ferrous sulfate and iron deficiency anemia

1 INTRODUCTION

The gestational period is a physiological event, where the woman undergoes anatomical alterations, metabolic, physical, social, and emotional changes. A group of women still present clinical and obstetric conditions that are unfavorable to their health and to the fetus, among them arterial hypertension, diabetes mellitus, obesity, and others, being classified as high-risk pregnancy. During this period the pregnant woman should change some habits, including having a healthy lifestyle, and should be accompanied by the health professional (SAMPAIO; ROCHA; LEAL, 2018).

During pregnancy, the need for iron increases due to the increase in blood volume and the development of tissues, especially the placenta, which is responsible for absorbing and sending the nutrients necessary for fetal growth. The amount of iron absorbed in the diet is insufficient, so it is necessary, in addition to a proper diet, the use of ferrous sulfate for all pregnant women routinely (MIRANDA et al., 2018).

During pregnancy some pregnant women may present complications harmful to the health of the mother and baby binomial, among them anemia. Anemia is a pathological condition where there is a reduction in the hemoglobin and erythrocyte mass. However, this reduction is still not enough to define anemia, since this change may occur in a physiological way, especially during the 24th week (SANTIS, 2019).

Anemia, according to the World Health Organization (WHO), is classified by hemoglobin, for men: less than 13.0 g/dL, in which between 11 g/dL and 12.9 g/dL mild; between 8 d/dL and 10.9 d/dL moderate; less than 8 g/dL severe; in women the Hb level less than 12.0 g/dL, in which between 11 g/dL and 11.9 g/dL mild; between 8 g/dL and 10.9 g/dL moderate and less than 8 g/dL severe. Other criteria can be adopted, such as hematometric indices as the Mean Corpuscular Volume (MCV): from 83.0 fl to 99.0 fl for men and from 82.4 fl to 96.4 fl for women, the Mean Corpuscular Hemoglobin (MCH): from 27.9 pg to 33.9 pg for men and 27.3 pg to 32.9 pg for women and the Red Blood Cell Distribution Width (RDW): from 11.4% to 13.5% for both sexes (MACHADO et al, 2019).

Iron deficiency anemia is caused by insufficient intake and absorption of iron, i.e., it results in a decline in mineral salt reserves and an inability of the erythropoietic tissue to ensure hemoglobin concentrations in the blood. This type of pathology occurs when there are several continuous stages of iron deficiency. Being an essential nutrient, it participates in the synthesis of red blood cells, besides acting in the transport of oxygen in the body. From this pathology on, its function becomes compromised (GONTIJO et al., 2017).

Through a survey published in 2015 by the World Health Organization (WHO), it is estimated that in developed countries this situation affects about a quarter of pregnant women. In Brazil, the Ministry of Health (MS) indicates a prevalence of 30% of pregnant women with anemia. Due to this scenario, the reduction of anemia is included among the global nutrition goals for 2025, with the prospect of a 50% decline among women of reproductive age (FERREIRA et al., 2018). Among the prevalence found in the macro-regions in Brazil, the highest was the northeast region with 39.1%, followed by the southeast region with 28.5% (OLIVEIRA et al., 2021).

The promotion and prevention of the health of pregnant women and fetuses happens through the prenatal consultation, aiming to reduce and prevent common problems in pregnancy, including anemia. Therefore, a broad approach should be taken to identify its main factors, the actual adherence to ferrous sulfate and aspects that may interfere with its continuity and effective control (FERREIRA et al., 2018). Since, iron deficiency, can generate negative effects during pregnancy, such as compromising placental function, causing miscarriages, intrauterine growth restriction, preterm birth, and preeclampsia (SCHAFASCHEK et al., 2018).

Routine iron supplementation can provide satisfactory fetal development and neonatal weight, and increase the chances of an adequate pregnancy and a full-term birth, benefiting not only the pregnant woman, but also her fetus (MAGALHÃES et al., 2018).

Its low adherence happens for several reasons, among them the side effects, such as nausea, vomiting, diarrhea, constipation, and abdominal pain. In addition, the absence of prenatal consultations or their low number becomes significant, since studies indicate that pregnant women who receive assistance in early pregnancy and perform more prenatal consultations tend to have better results compared to pregnant women who start late (FERREIRA et al., 2018).

Analyzing this public health problem, the research is justified by the need for further discussion and replication of knowledge among society, especially nurses and nursing students, since they are active agents in health promotion, and need a clear understanding of the need for use of ferrous sulfate during pregnancy. Therefore, practical and theoretical knowledge is needed to provide better assistance.

Given what was addressed, the following guiding question for the research was established: "Can non-adherence to the use of ferrous sulfate increase the risk of developing iron deficiency anemia?" Therefore, the present study aims to: Evaluate in the literature available evidence of iron deficiency anemia in pregnant women with low adherence to ferrous sulfate and analyze sociodemographic characteristics related to iron deficiency anemia in pregnant women.

2 METHODOLOGY

The study is an integrative literature review, with a descriptive qualitative approach. The integrative review is a method that enables the synthesis of knowledge and the application of study results. It is a study based on secondary sources, through a bibliographic survey and based on the experience lived by the authors to carry out an integrative review. It allows the inclusion of experimental and non-experimental studies, combines theoretical and empirical data, incorporating concept definition, review of theories and evidence, and analysis of methodological problems of a particular topic (SOUSA; SILVA; CARVALHO, 2010).

To prepare this study, the 6 steps used in the integrative review methodology were followed, including: identifying the topic and defining the guiding question, determining the descriptors according to the Health Science Descriptors (DeCS) and searching for studies in the databases using inclusion and exclusion criteria, identifying the selected studies, analyzing the selected studies, interpreting the results, and presenting the review and synthesis of knowledge (BELO HORIZONTE, 2014).

The research took place between the months of September and October 2021. To survey the articles in the literature, an electronic search was conducted in the following databases: Latin American and Caribbean Literature on Health Sciences (LILACS), U.S. National Library of Medicine (PUBMED),

Scientific Electronic Library Online (SCIELO), Virtual Health Library (VHL), Online Medical Literature Analysis and Search System (MEDLINE).

The descriptors were selected through the Health Science Descriptors (DeCS) in Portuguese: Pregnancy, Iron-deficiency anemia, Ferrous Sulfate, using the Boolean operator "AND", and the combinations were described as follows. "Pregnancy AND iron deficiency anemia," "Ferrous sulfate AND iron deficiency anemia," and "Pregnancy AND iron deficiency anemia.

Soon after, the following inclusion criteria were established: articles published in the last 5 years, which showed results and discussions on the theme, complete articles, published in Portuguese, English, and Spanish. Duplicate articles in databases, not free of charge, theses and monographs were excluded.

The current study presents the possibility of plagiarism in its construction, containing information copied from existing research, however, the researchers assumed the commitment and responsibility for the entire study, citing the authors and the databases used, following the research ethics and respecting the guidelines and regulatory standards of Resolution 466/2012 of the National Health Council. Approval from the Research Ethics Committee (REC) is not necessary, since this is an integrative literature review based on public data.

After selecting the descriptors and making their association through the descriptors, table 01 was created, which contains information about the combinations used divided by database and the number of articles found in each one.

3 RESULTS AND DISCUSSION

Finally, after combining the descriptors and using the databases, a total of 5,892 articles were obtained, after analysis, 5,767 were excluded and 125 were included after reading the title, and after reading the abstracts of the articles, 70 were excluded and 55 were included. Thus, to analyze the articles more specifically, a full reading was performed, 45 articles were excluded, leaving a total of 10 articles available in full, being selected for the integrative review, as shown in chart 01.

TABLE 01 - Filtering of articles by DeCS in the databases.

COMBINATIONS	BVS	MEDLINE	SCIELO	PUBMED	LILACS	TOTAL
Pregnancy *AND* Iron-deficiency anemia	424	30	08	367	11	840
Ferrous Sulfate *AND* Iron-deficiency anemia	107	05	02	130	10	254
Pregnancy *AND* Iron-deficiency anemia	1.621	2.220	08	835	114	4798
Total number of articles						**5.892**
Excluded by title						**5.767**
Excluded by Abstract						**70**
Excluded after full reading						**45**
Remaining Articles						**10**

Source: Own elaboration, 2021.

3.1 FACTORS RELATED TO POOR ADHERENCE TO FERROUS SULFATE

According to Gebreamlak and colleagues (2017) one of the main reasons for difficulty in adhering to ferrous sulfate use are side effects, especially those affecting the gastrointestinal tract, most pregnant women reported heartburn as the main side effect, about 96.6%, while some pregnant women complained of vomiting (1.6%), constipation (1.3%), and diarrhea (0.5%).

Thus, Kiwanuka and colleagues (2017) show in their study that the side effects stand out as the reason why some mothers stop taking their medications, because as the dose of supplementation increases, its adverse effects also increase. Thus, there was a need to reevaluate the prescription of iron supplementation in all pregnant women, taking into consideration the benefits and harms to both the mother and the fetus. In a survey by Nir Melamed, it was observed that although 45% of the participants reported at least one side effect, only 18.3% attributed discontinuation of therapy to side effects.

In contrast, Niquini and collaborators (2016) claimed that through studies, the factors related to lower use of ferrous sulfate would be: younger age, race, low education and income, multiparity. According to factor analysis, it was found that the higher the age, the higher the prevalence of not using the supplement, with 1.7% lower than younger women. Black women had a higher prevalence of non-use than white women, about 24.5%, and whites versus browns, about 5%. Multiparous women had a higher prevalence than nulliparous women, about 16.5%. A lower proportion of iron supplement use was reported among women of lower economic class or lower education.

Thus, Lebso and collaborators (2017) report in their research that pregnant women who have lower socioeconomic classes indicate greater chances of being carriers of anemia than those with higher income, since they are unable to buy food in sufficient quantities to meet their needs. In this way, Polanco and collaborators (2020) show that for those pregnant women who are adequately monitored and use iron supplements or have a satisfactory nutritional status, they tend to raise the hemoglobin value by the end of pregnancy, providing a better quality of life for the binomial.

Besides the addressed factors, there is still inadequate prenatal care, being from the first consultation, even to the return, besides the lack of guidance on the use of the supplement and unavailability of the same free of charge and in sufficient quantity, being one of the important reasons for the low adherence to supplementation (NIQUIRI et al., 2016).

In addition, Cassimiro and Mata (2017) report weaknesses in the guidance on the use of ferrous sulfate, highlighting: the prescription with absence of information on use and reason; the posology and side effects. It should be remembered that adequate health education has a positive impact on the relationship between professional and client, favoring a healthy pregnancy. For a quality prenatal care, the availability of ferrous sulfate is necessary. However, some pregnant women reported that they stopped using it due to difficulty in accessing it, highlighting its lack. It is noteworthy that the adherence to this supplement

depends on the free distribution, because some users do not have financial resources, hindering its good adherence.

Kamau and colleagues (2019) further emphasizes the importance in providing adequate information to pregnant women, this is likely to lead to a satisfactory attitude towards their gestational period, and individualized counseling to pregnant women can discuss concerns, doubts, and negative attitudes through discussion and clarification.

In agreement, Lisboa and collaborators (2019) highlight in their studies that among the factors, fit mothers with up to eight years of schooling, black, family income less than or equal to one minimum wage, who have completed six or more prenatal consultations, the lack of access to it in the health service, weaknesses in the guidance offered, and side effects, as shown in chart 02.

TABLE 02 - Studies chosen by characterizing the factors that influence adherence to ferrous sulfate

AUTHOR	TITLE	REVIEW /YEAR	OBJECTIVE	CONCLUSION
CASSIMIRO, G.N.; MATA, J. A. L.	Adherence to the use of ferrous sulfate by pregnant women assisted in the system health.	Revista de Enferm a gem UFPE online, 2017.	To identify the factors that influence the adherence of pregnant women to the use of ferrous sulfate during prenatal care in the Brazilian National Health System Health.	Forgetfulness and difficulty in accessing the supplement were shown to be factors that hinder the adherence of pregnant women. The influence of the prenatal caregiver was shown to contribute positively on adherence.
KAMAU, M. et al.	Effect of community- based health education onknowledge and attitude towards iron and folic acid supplementation among pregnant women in Kiambu County, Kenya: A quasi experimental study.	PLoSO ne , 2019.	To determine the effect of community-based IFAS health education using CHVs, at knowledge of IFAS, levels of counseling.	The implementation of community-based health education improved maternal knowledge. Therefore, it is necessary to integrate the community-based approach with prenatal distribution of IFAS to improve supplementation.
KIWANUKA T. S. et al.	Adherence to iron supplements among women receiving antenatal care at Mulago National Referral Hospital, Uganda-cross-sectional study.	BMC research notes, 2017.	To determine the level and factors associated with adherence to iron supplementation among women seen in the prenatal clinic.	There was low adherence to iron supplements among mothers seen in the antenatal clinic. We recommend a national assessment of adherence to iron supplements and look for ways to increase adherence.
LEBSO, M. et al.	Prevalence of anemia and associated factors among pregnant women in Southern Ethiopia: A community based cross-sectional study.	PloSone , 2017.	Determine the prevalence of anemia and associated factors among pregnant women.	Anemia has moderate public health significance in the area. Community-based interventions should be improved.

GEBREAMLAK, B. et al.	High adhereto iron/folic acid supplementation during pregnancy time among antenatal andpostnatal care attendant mothers in Governmental Health Centers in Akaki Kality Sub City, AddisAbaba, Ethiopia: Hierarchical negative binomial poisson regression.	PloSone, 2017.	To assess adherence and identify factors associated with a range of iron/folic acid intake during pregnancy among mothers attending prenatal care.	Adherence to iron supplementation /Folic acid during pregnancy among mothers attending prenatal and postnatal care was considered high. Activities that addressed the above-mentioned factors were highly recommended.
POLANCO R. A. et al.	Efectividad de um programa educativo sobre anemia ferropénica em gestantes. Consultorio 12. Siboney. Bayamo.	Multime d, 2020.	To implement an educational program for anemic pregnant women in office 12 of the Siboney cast of the Bayamo municipality, based on an integrative preventive model.	The hypothesis that if applied an educational program to anemic pregnant women in the 12th ward of the Siboney district of the Bayamo municipality about the intake of dietary supplements e balanced nutrition.
NIQUINI, R. P. et al.	Factors associated with non-adherence to prescribediron supplement use: a study with pregnant women in the city of Rio de Janeiro.	Revista Brasileira de Maternal and Child Health, 2016.	To identify factors associated with the non-use of iron supplementation (IS) by pregnant women attending prenatal care at the Unified Health System (SUS) in the Municipality of Rio de Janeiro.	The orientation of health professionals regarding the use of IS and its regular availability can increase adherence to the prescription among pregnant women and prevent anemia iron deficiency.

Source: Prepared by the authors based on survey, 2021.

3.2 COMPLICATIONS FOR PREGNANT WOMEN AND NEWBORNS RELATED TO LOW ADHERENCE TO FERROUS SULFATE

Iron deficiency can result in negative effects on the fetus, such as interfering with placental function, spontaneous abortion, intrauterine growth restriction, and preterm birth. It is more plausible to use ferrous sulfate and proper nutrition to correct or prevent iron deficiency anemia. Supplementation is indicated for all pregnant women, according to the World Health Organization (WHO). However, its use should be limited because its indiscriminate use can increase hemoglobin levels and blood viscosity, promoting placental malperfusion and unfavorable outcomes for the mother and fetus, such as: low weight, preeclampsia, maternal hypertension, and uterine growth retardation (SCHAFASCHEK et al., 2018).

According to Santis (2019) patients who are at higher risk of developing iron deficiency anemia are multigestion, those who have had a pregnancy in less than one year, adolescents, vegetarians, and those with a history of high menstrual losses. Anemia in early pregnancy, and its direct effects on the pregnant woman, is associated with a higher risk of premature delivery and of the newborn being born with a low

birth weight. Thus, Fouelifack, Sama and Sone (2019) concluded that iron deficiency during pregnancy increases the risk of maternal mortality, fetal morbidity and mortality.

However, Sânchez and colleagues (2018) disagree with the complications brought in the present study, where they state that all anemia in pregnancy should be evaluated to be distinguished from pathological anemia, since severe anemia may be related to decreased amniotic fluid volume, fetal cerebral vasodilation, abnormalities in heart rate patterns, and stillbirth, as shown in Table 03.

TABLE 3 - Studies selected regarding complications in pregnant women and newborns.

AUTHOR	TITLE	MAGAZINE / YEAR	OBJECTIVE	CONCLUSION
FOUELI FACK, F.Y.; SAMA, J.D.; SONE, C.E.	Assessment of adherence to iron supplementation among pregnant women in the Yaoundegynaeco-obstetric and paediatric hospital.	The Pan African Medical Journal, 2019.	To evaluate the rate of adherence to iron supplementation and its determinants during pregnancy.	To improve adherence to prenatal iron supplementation, it is important to increase communication for behavior change e counseling.
SCHAFA SCHEK, H. *et al.*	Ferrous sulfate supplementation in pregnancy and gestational anemia: a review of the literature.	Catarinens Archivesfrom Medicine, 2018.	To conduct a literature review on the influence of iron supplementation in the prevention of iron deficiency anemia in pregnancy.	The need to reevaluate the prescription of iron supplementation to all pregnant women and consider the harms and benefits was pointed out.

Source: Prepared by the authors based on survey, 2021.

4 CONCLUSION

Not using ferrous sulfate makes pregnant women more likely to develop iron deficiency anemia, since the supplement replenishes iron losses caused by pregnancy, since during pregnancy, the placental formation process occurs, which will be responsible for fetal growth. Therefore, the World Health Organization (WHO) recommends the use of the supplement as prevention and treatment of anemia in pregnant women during the entire gestation, and may extend up to three months after delivery.

This study showed that the main factors responsible for the non-adherence to ferrous sulfate by pregnant women are the side effects, age, race, low education, multiparity, number of consultations and family income. On the other hand, the lack of information regarding the benefits of ferrous sulfate during prenatal consultations was also observed.

Thus, it is necessary a qualified assistance by health professionals, where a link between both is established, so that there is an effective communication with pregnant women during prenatal consultations, emphasizing the importance of the use of ferrous sulfate, its possible side effects and complications that can occur if adherence is not satisfactory, such as miscarriage, preeclampsia and fetal growth deficit. This counseling implies positively in the behavior of the pregnant woman, so that she becomes responsible for the use of the medication and the protagonist of her health.

It is worth highlighting the importance of implementing strategies to improve adherence to the supplement, such as leaving the medication in an easy-to-view place, using alarms and reminders in specific places and of greater accessibility, avoiding forgetfulness, as it is one of the reasons why adherence failure occurs, and these techniques are indispensable.

Therefore, the approach of health education to pregnant women should happen through the basic health unit, strengthening the bond between them, improving maternal knowledge and providing a positive attitude. For this to happen, the dissemination of knowledge between health professionals and pregnant women is necessary; the professional must be trained and ready to discuss possible doubts regarding the use of the supplement, so that its routine use is accepted. In addition, it would be important to perform the distribution of supplements along with health education for pregnant women in their homes.

REFERENCES

CASSIMIRO, G. N.; MATA, J. A. L. Adesão ao uso de sulfato ferroso por gestantes atendidas no sistema único de saúde. Revista de Enfermagem UFPE online, p. 2156-2167, 2017.

EDUCAÇÃO, Grupo Anima. Manual Revisão Bibliográfica Sistemática Integrativa: a pesquisa baseada em evidências. Belo Horizonte: Grupo Anima Educação, 2014.

FERREIRA, L. B. et al. Fatores Assistenciais e Gestacionais Associados à Anemia em Nutrizes Atendidas em um Banco de Leite Humano.Ciência& Saúde.v.23, p.3567-3575, 2018.

FOUELIFACK, F.Y.; SAMA, J. D.; SONE, C. E. Assessment of adherence to iron supplementation among pregnant women in the Yaoundegynaeco-obstetric and paediatric hospital. The Pan African Medical Journal, v. 34, 2019.

GEBREAMLAK, B.; DADI, A. F.; ATNAFU, A. High adherence to iron/folic acid supplementation during pregnancy time among antenatal and postnatal care attendant mothers in Governmental Health Centers in Akaki Kality Sub City, Addis Ababa, Ethiopia: Hierarchical negative binomial poisson regression.PloSone, v. 12, n. 1, p. e0169415, 2017.

GONTIJO, T. L. et al. Prática profilática da anemia ferropriva em crianças na estratégia saúde da família. Revista de Enfermagem do Centro-Oeste Mineiro, v. 7, 2017.

KAMAU, M. et al. Effect of community based health education on knowledge and attitude towards iron and folic acid supplementation among pregnant women in Kiambu County, Kenya: A quasi experimental study.PLoS One, v. 14, n. 11, p. e0224361, 2019.

KIWANUKA, T. S. et al. Adherence to iron supplements among women receiving antenatal care at Mulago National Referral Hospital, Uganda-cross-sectional study. BMC research notes, v. 10, n.1, p.1-6, 2017.

LEBSO, M.; ANATO, A.; LOHA, E. Prevalence of anemia and associated factors among pregnant women in Southern Ethiopia: A community based cross-sectional study. PloSone, v. 12, n. 12, p. e0188783, 2017.

LISBOA, C. S. et al. Fatores associados ao uso de sulfato ferroso por gestantes: Coorte Nisami. Revista Brasileira de Saúde Funcional, v. 8, n. 1, p. 17-17, 2019.

MACHADO, I. E. et al. Prevalência de anemia em adultos e idosos brasileiros. Revista Brasileira de Epidemiologia, v. 22, 2019.

MAGALHÃES, E. I. S. et al. Prevalência de anemia e determinantes da concentração de hemoglobina em gestantes. Cadernos Saúde Coletiva, v. 26, p. 384-390, 2018.

MIRANDA, V. I. A. et al. Validity of patient-reported anemia and therapeutic use of iron supplements during pregnancy: 2015 Pelotas (Brazil) birth cohort. Cadernos de saúde pública, v. 34, n. 6, p. e00125517-e00125517, 2018.

NIQUINI, R. P. et al. Factors associated with non-adherence to prescribed iron supplement use: a study with pregnant women in the city of Rio de Janeiro. Revista Brasileira de Saúde Materno Infantil, v. 16, p. 189-199, 2016.

OLIVEIRA, L. M. B. et al. Anemia ferropriva na gravidez e a suplementação de sulfato ferroso. Brazilian Journal of Development, v. 7, n. 5, p. 48225-48233, 2021.

POLANCO R. A. et al. Efectividad de um programa educativo sobre anemia ferropénica em gestantes. Consultorio 12. Siboney. Bayamo. Multimed, 2020.

SAMPAIO, A. F. S.; ROCHA, M. J. F.; LEAL, E. A. S. High-risk pregnancy: clinical-epidemiological profile of pregnant women attended at the prenatal service of the Public Maternity Hospital of Rio Branco, Acre. Revista Brasileira de Saúde Materno Infantil, v. 18, p. 559-566, 2018.

SANTIS, G. C. Anemia: definição, epidemiologia, fisiopatologia, classificação e tratamento. Medicina (Ribeirão Preto), v. 52, n. 3, p. 239- 251, 2019.

SCHAFASCHEK, H. et al. Suplementação de sulfato ferroso na gestação e anemia gestacional: uma revisão da literatura. Arquivos Catarinenses de Medicina, v. 47, n. 1, p. 198-206, 2018.

SÁNCHEZ, L. M. M. et al. La anemia fisiológica frente ala patológica enelembarazo. Revista Cubana de obstetricia y Ginecologia, v. 44, n. 2, p. 1-12, 2018.

SOUZA, M. T.; SILVA, M. D.; CARVALHO, R. Revisão integrativa: o que é e como fazer. Einstein (São Paulo), v. 8, p. 102-106